Notice of Allowability	Application No.	Applicant(s)	
	09/864,187	SHIMIZU, KOICHI	
	Examiner	Art Unit	
	Kandasamy Thangavelu	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *February 23, 2005*.

2. ☒ The allowed claim(s) is/are *1,3-8 and 10-15*.

3. ☒ The drawings filed on *25 May 2001 and 23 February 2005* are accepted by the Examiner.

4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☒ All b) ☐ Some* c) ☐ None of the:
      1. ☒ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

KEVIN J. TESKA
SUPERVISORY
PATENT EXAMINER

DETAILED ACTION

Introduction

1. This communication is in response to the Applicant's communication dated February 23, 2005. Claims 1, 3-8 and 10-15 were amended. Claims 2 and 9 were deleted. Claim 16 was added. Claims 1, 3-8 and 10-16 of the application are pending.

Drawings

2. The drawings submitted on February 23, 2005 are accepted.

Examiner's Amendment

3. Authorization for this examiner's amendment was given in a telephone conversation by Mr. H.J. Staas on May 16, 2005.

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

4. In the Claims:

In the amended Claim 1, Lines 7-9, "reflecting the physical simulation models of said element groups in the boundaries searched on a screen for setting analysis conditions for the boundaries of said object model"

has been changed to

-- reflecting the physical simulation models of said element groups to the boundaries searched on a screen for setting analysis conditions for the boundaries of said object model --.

In the amended Claim 1, Lines 14-16, "wherein said setting the physical simulation models comprises setting the physical simulation models of said element groups on an element group set list screen displayed in common on said screen for setting analysis conditions of said boundaries"

has been changed to

-- wherein said setting the physical simulation models comprises setting the physical simulation models of said element groups on an element group set list screen displayed in common with said screen for setting analysis conditions of said boundaries--.

In the amended Claim 3, Lines 1-3, "The multi-physics analysis method according to Claim 1, further comprising displaying the form of said object model in common on said element group set list screen"

has been changed to

-- The multi-physics analysis method according to Claim 1, further comprising displaying the form of said object model in common with said element group set list screen --.

In the amended Claim 8, Lines 1-3, "A method for setting analysis conditions for multi-physics analysis for simulating an object model and a plurality of physical simulation models, comprising"

has been changed to

-- A method for setting analysis conditions for multi-physics analysis for simulating an object model with a plurality of physical simulation models, comprising --.

In the amended Claim 8, Lines 8-10, "reflecting the physical simulation models of said element groups in the boundaries searched on a screen for setting analysis conditions for the boundaries of said object model; and"

has been changed to

-- reflecting the physical simulation models of said element groups to the boundaries searched on a screen for setting analysis conditions for the boundaries of said object model; and--.

In the amended Claim 8, Lines 11-12, "setting the analysis conditions of said boundaries on a screen for setting analysis conditions of said reflected boundaries"

has been changed to

-- setting the analysis conditions for said boundaries on the screen for setting analysis conditions of said reflected boundaries --.

In the amended Claim 8, Lines 13-15, "wherein said setting the physical simulation models comprises setting the physical simulation models of said element groups on an element group set list screen displayed in common on said screen for setting analysis conditions of said boundaries"

has been changed to

-- wherein said setting the physical simulation models comprises setting the physical simulation models of said element groups on an element group set list screen displayed in common with said screen for setting analysis conditions of said boundaries--.

In the amended Claim 10, Lines 1-3, "The method for setting analysis conditions for multi-physics analysis according to Claim 8, further comprising displaying the form of said object model commonly on said element group set list screen"

has been changed to

-- The method for setting analysis conditions for multi-physics analysis according to Claim 8, further comprising displaying the form of said object model commonly with said element group set list screen --.

In the amended Claim 13, Lines 1-4, "The method for setting analysis conditions for multi-physics analysis according to Claim 8, further comprising generating a corresponding list showing a relationship between the element groups and the boundaries from the element group and boundary data of said object model"

has been changed to

-- The method for setting analysis conditions for multi-physics analysis according to Claim 8, further comprising generating a correspondence list showing a relationship between the element groups and the boundaries from the element group and boundary data of said object model--.

In the amended Claim 15, Lines 1-4, "A storage medium for storing computer readable and executable instructions which control the computer to perform a process for setting analysis conditions for multi-physics analysis for simulating an object model with a plurality of physical simulation models when executed in the computer by"

has been changed to

-- A storage medium storing computer readable and executable instructions which when executed by the computer perform a process for setting analysis conditions for multi-physics analysis for simulating an object model with a plurality of physical simulation models, the process comprising--.

In the amended Claim 15, Lines 9-11, "reflecting the physical simulation models of said element groups in the boundaries searched on a screen for setting analysis conditions for the boundaries of said object model; and"

has been changed to

-- reflecting the physical simulation models of said element groups to the boundaries searched on a screen for setting analysis conditions for the boundaries of said object model; and--.

In the amended Claim 15, Lines 12-13, "setting the analysis conditions of said boundaries on a screen for setting analysis conditions of said reflected boundaries"

has been changed to

-- setting the analysis conditions for said boundaries on the screen for setting analysis conditions of said reflected boundaries --.

In the amended Claim 15, Lines 14-16, "wherein said setting of the physical simulation models comprises setting the physical simulation models for said element groups on an element group set list screen that is displayed in common on said screen for setting analysis conditions of said boundaries"

has been changed to

-- wherein said setting of the physical simulation models comprises setting the physical simulation models for said element groups on an element group set list screen that is displayed in common with said screen for setting analysis conditions of said boundaries--.

In the amended Claim 16:

Delete claim 16.

Reasons for Allowance

5. Claims 1, 3-8 and 10-15 of the application are allowed over prior art of record.

6. The following is an Examiner's statement of reasons for the indication of allowable subject matter:

The closest prior art of record shows:

(1) a system and method for analyzing a baseline and a modified geometry; the method receives a representation of the geometry along with an associated element identifier for each geometric element from a CAD model; the method then receives a mapping between the element identifiers and analyzer identifiers from an analyzer; the method uses the element identifier to determine the analyzer identifier for the element; the commands that identify the element are executed by the analyzer; the commands include assigning a mesh or boundary condition to each element; a selected characteristic of the geometry such as structural stresses r thermal gradients can be analyzed with reference to the assigned meshes and boundary conditions (**Badding et al.,** U. S. Patent 6,526,550);

(2) a computer implemented method for modeling of faults and fractures in geological formation using finite element modeling; the method uses a user interface for inputting deformations, pre-existing faults and fractures and material rock properties; software code is used to simulate the motion of each node in the subsurface volume defined by the user interface; the code solves for forces on each node and their resulting movement; the user interface is used to produce a quick look at the deformation results and view the results of the full simulation; the GUI is used to specify the number of nodes and the aspect ratio of the model as well as the boundary conditions; deformations are produced on the simulated model from the boundary conditions (**Malthe-Sorenssen et al.,** U. S. Patent 6,370,491); and

(3) a method and system for simulating resin transfer molding (RTM) process which allows the operator to vary the process parameters at any time during simulation; the parameters include mold cavity design parameters, mold filling process parameters, physical property parameters and system processing parameters; the system logic includes the logic for describing the flow domain of the resin as a finite element mesh including a plurality of nodes and employing a control volume finite element analysis based on a preselected set of governing equations to describe the pressure distribution and velocity at selected points in time during the filling process; the system includes a graphical user interface which allows the operator to provide all necessary input data using menu driven modes; the boundary conditions at the feed ports and at the flow front are specified and are used to solve the equations to provide pressure and velocity distribution (**White et al.,** U.S. Patent 5,940,309).

6.1 Applicant's first set of claims consists of Claims 1 and 3-7.

Independent Claim 1 is directed to a multi-physics analysis method for simulating an object model with a plurality of physical simulation models. The claim identifies the uniquely distinct features of:

"reflecting the physical simulation models of said element groups to the boundaries searched on a screen for setting analysis conditions for the boundaries of said object model", "wherein said setting the physical simulation models comprises setting the physical simulation models of said element groups on an element group set list screen displayed in common with said screen for setting analysis conditions of said boundaries".

Because the closest prior art fails to teach or fairly suggest reflecting the physical simulation models of said element groups to the boundaries searched on a screen for setting analysis conditions for the boundaries of said object model, wherein said setting the physical simulation models comprises setting the physical simulation models of said element groups on an element group set list screen displayed in common with said screen for setting analysis conditions of said boundaries, as claimed by the Applicant, Claims 1 and 3-7 are deemed novel and allowable.

6.2 Applicant's second set of claims consists of Claims 8 and 10-14.

Independent Claim 8 is directed to a method for setting analysis conditions for multi-physics analysis for simulating an object model with a plurality of physical simulation models. The claim identifies the uniquely distinct features of:

"reflecting the physical simulation models of said element groups to the boundaries searched on a screen for setting analysis conditions for the boundaries of said object model", "wherein said setting the physical simulation models comprises setting the physical simulation models for said element groups on an element group set list screen displayed in common with said screen for setting analysis conditions of said boundaries".

Because the closest prior art fails to teach or fairly suggest reflecting the physical simulation models of said element groups to the boundaries searched on a screen for setting analysis conditions for the boundaries of said object model", "wherein said setting the physical simulation models comprises setting the physical simulation models for said element groups on

an element group set list screen displayed in common with said screen for setting analysis conditions of said boundaries, as claimed by the Applicant, Claims 8 and 10-14 are deemed novel and allowable.

6.3 Applicant's third set of claims consists of Claim 15.

Independent Claim 15 is directed to a storage medium storing computer readable and executable instructions which when executed by the computer perform a process for setting analysis conditions for multi-physics analysis for simulating an object model with a plurality of physical simulation models. The claim identifies the uniquely distinct features of:

"reflecting the physical simulation models of said element groups to the boundaries searched on a screen for setting analysis conditions for the boundaries of said object model", "wherein said setting of the physical simulation models comprises setting the physical simulation models for said element groups on an element group set list screen that is displayed in common with said screen for setting analysis conditions of said boundaries".

Because the closest prior art fails to teach or fairly suggest reflecting the physical simulation models of said element groups to the boundaries searched on a screen for setting analysis conditions for the boundaries of said object model", "wherein said setting of the physical simulation models comprises setting the physical simulation models for said element groups on an element group set list screen that is displayed in common with said screen for setting analysis conditions of said boundaries, as claimed by the Applicant, Claim 15 is deemed novel and allowable.

7. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kandasamy Thangavelu whose telephone number is 571-272-3717. The examiner can normally be reached on Monday through Friday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska, can be reached on 571-272-3716. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to TC 2100 Group receptionist: 571-272-2100.

K. Thangavelu
Art Unit 2123
May 16, 2005

KEVIN J. TESKA
SUPERVISORY
PATENT EXAMINER